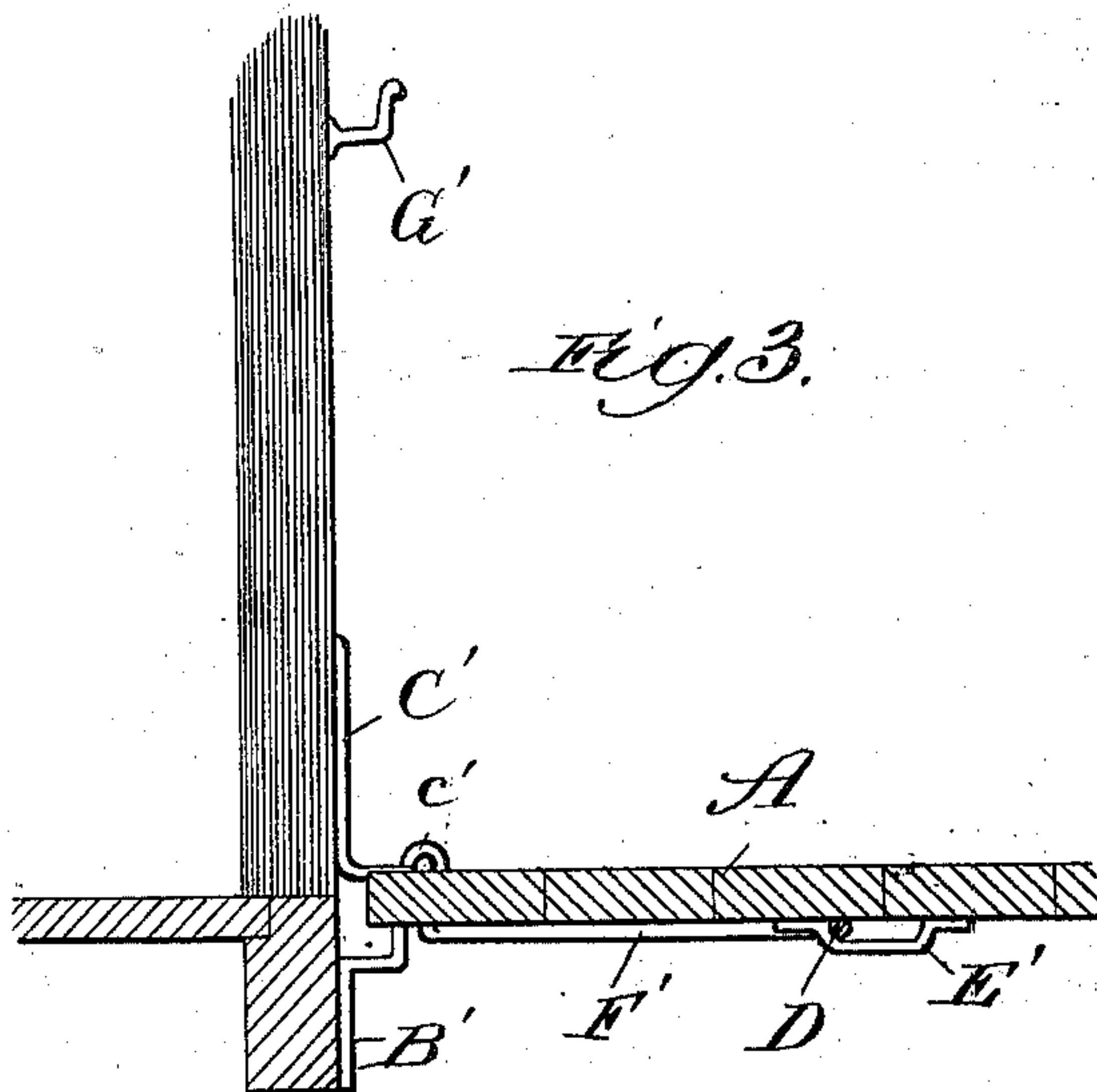
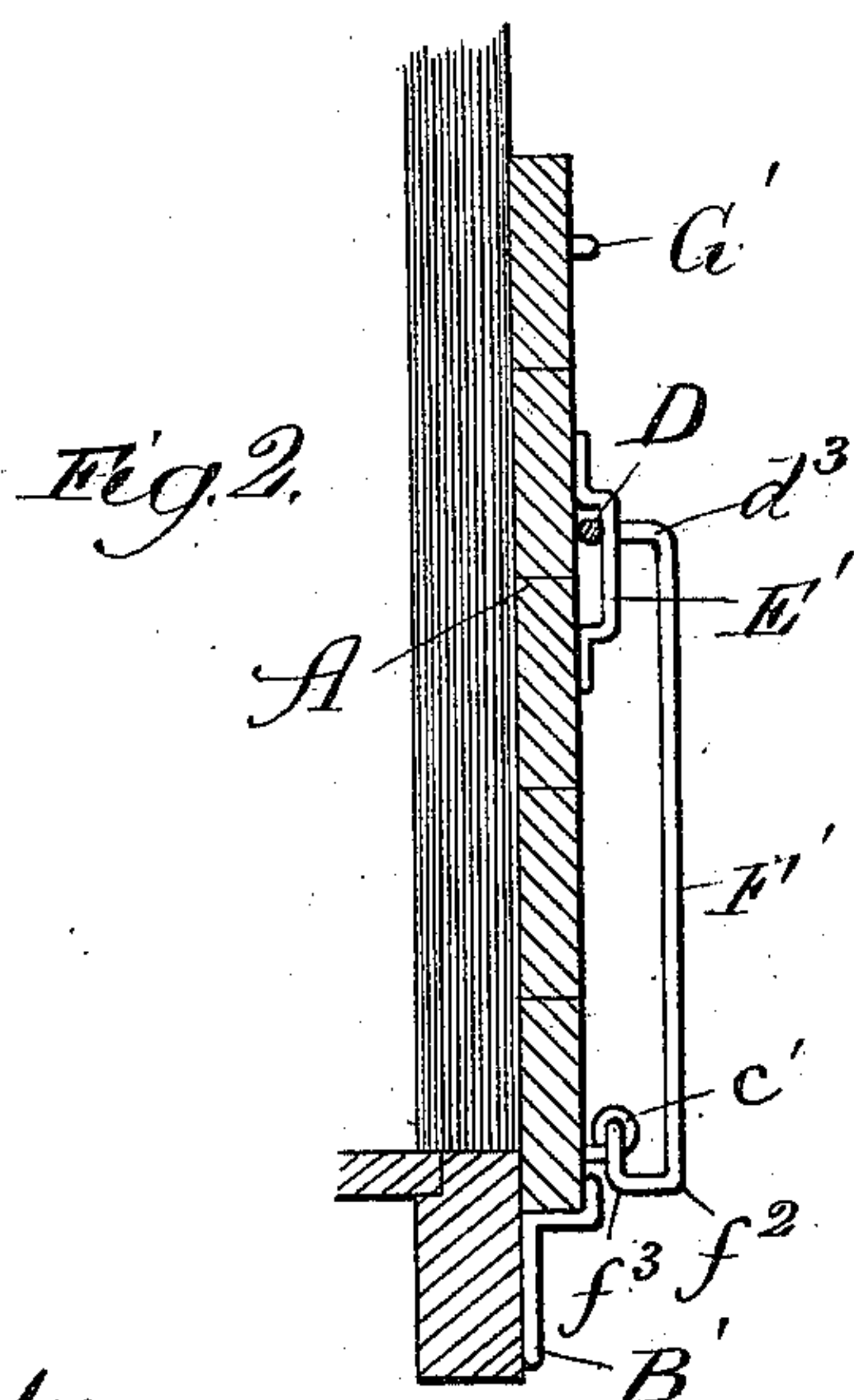
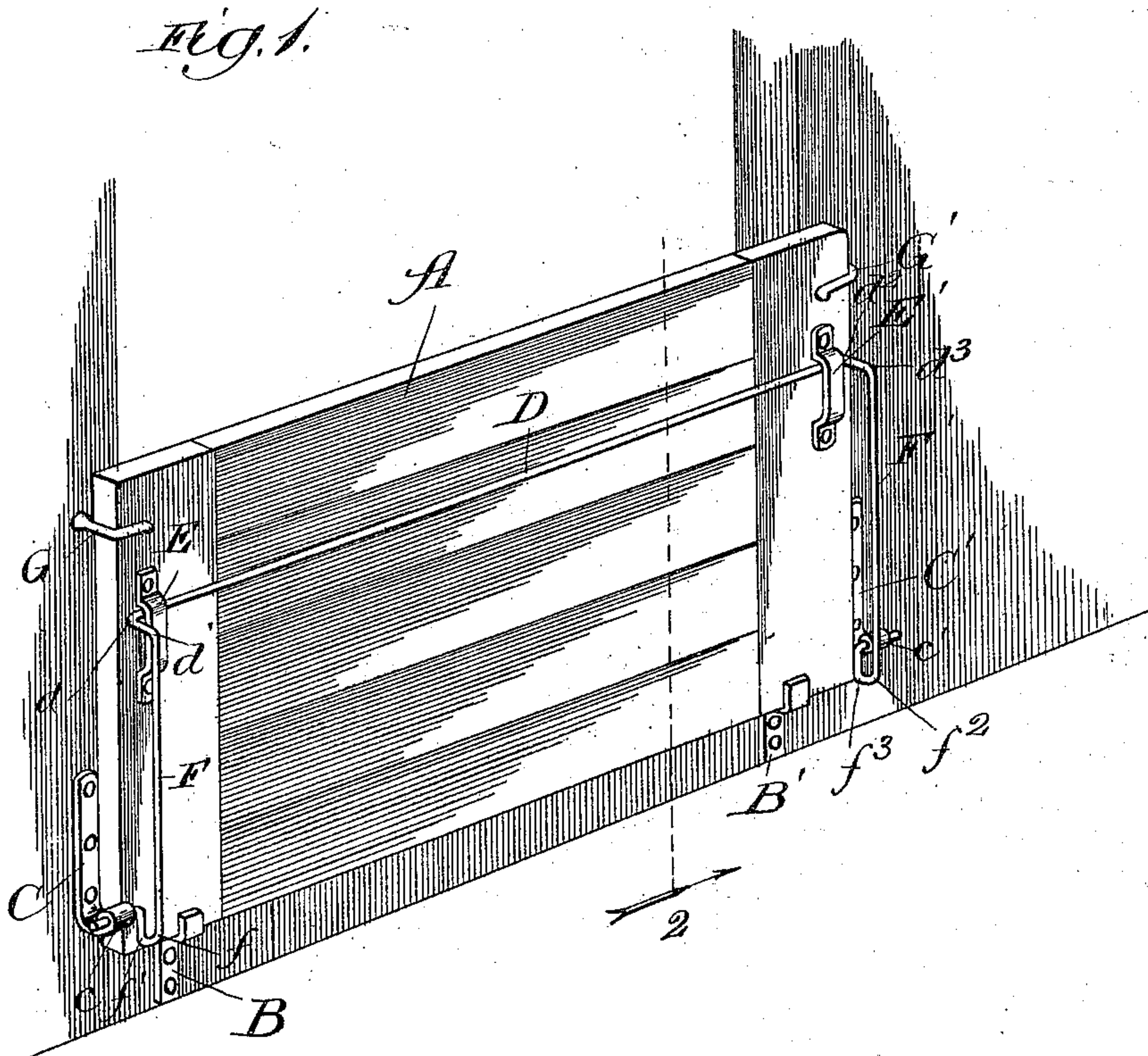


(No Model.)

E. R. M. PIERCE.
CAR DOOR.

No. 555,969.

Patented Mar. 10, 1896.



Witnesses:
 Jas. E. Gaylord
 Lute J. Allen

Inventor,
Edgar R. M. Pierce,
By Samuel E. Kibben,
Atty.

UNITED STATES PATENT OFFICE.

EDGAR R. M. PIERCE, OF CHICAGO, ILLINOIS.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 555,969, dated March 10, 1896.

Application filed June 15, 1894. Serial No. 514,657. (No model.)

To all whom it may concern:

Be it known that I, EDGAR R. M. PIERCE, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Doors, of which the following is a specification.

The object of my invention is to provide suitable and efficient doors for use particularly on stock-cars, which doors will close the openings and at the same time serve as gangways when in their lowered position. Heretofore such doors have been swung on hinges; but the accumulation of clods and manure in parts adjacent to the hinges prevented the closing and locking of the doors, and it is one of the objects of my invention to devise suitable means to obviate this difficulty, whereby the doors may be closed notwithstanding this accumulation of dirt, &c.; and my invention consists in the features and details of construction hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of my improved door, showing the ordinary side posts and the opening of a car; Fig. 2, a sectional view taken through line 2 of Fig. 1, showing the door in its closed position; and Fig. 3, a similar view showing the door in its lowered position.

In constructing my improved door I first make a door-frame A of suitable material and of the desired dimensions to close preferably the lower half of the car-door opening, the upper half thereof being arranged to slide out of the way in the usual and well-known manner.

Upon the floor-sills and below the door-opening I secure in any suitable manner brackets B B', bent twice at right angles to receive the bottom portion of the door-frame and keep it in contact with the sides of the car.

Upon the sides of the car and at the proper height and distance from the door-opening I arrange hangers C C', having their free ends turned to form bearings c c' for the ends of the continuous but bent rod D. This rod is preferably bent in the shape shown in the drawings. The middle portion of the rod is straight and runs from side to side of the door-frame, preferably at a point above the central axis of the frame. In order to loosely secure the frame upon this rod and to allow it a free

predetermined vertical movement I fasten straps or loops E E' upon the sides of the frame and embracing the straight rod. As shown particularly in Fig. 2, the rod is twice bent at right angles at d d', followed by a straight vertical portion F, and a portion twice bent at right angles at f f', preferably below the hanger C, whose bearing c receives the free end of the rod. The other end portion of the rod D is similarly shaped and bent, respectively, at d² d³, with a straight vertical portion F', bent at f² f³ and having its free end entering the bearing c'.

Any suitable means may be provided for locking the door in place, as by means of the turn-bolts G G', as shown particularly in Fig. 1.

When it is desired to open the door, the bolts G G' are turned, and then the door is allowed to swing downward, pivoting both upon the brackets B B' and hangers C C', when it will assume the relative position shown in Fig. 3. As is well known, clods, frozen or dried manure, &c., accumulate or cake upon the edge of the door-opening and work in between the hinges or between the lower portion of the door-frame and the car-body. When ordinary rigidly-secured hinges are employed it is impossible to securely close the door and lock it without liability of breaking or springing the door or hinge. By means of the loose manner of hinging upon the brackets B B' and the vertical movement of the door-frame upon the rod, I am still enabled to close and lock my door, although the bottom may be prevented from contacting the sides of the car.

Assuming that some obstruction has collected at the bottom of the door, in swinging the door closed, one side will be thrown upward and out of one of the brackets B B', one end of the horizontal straight portion of the rod D will therefore lie near the lower portion of one loop, and the other end will lie near the top of the other loop, on account of the door-frame being disturbed from its normally-horizontal position. In this way I am able to provide a simple and inexpensive door for stock and similar cars, which can be made to close under all circumstances without damaging it, or breaking and straining the hinges

in any manner; and, furthermore, when the door is in its lowered position, it may be used as a gangway or passage for the stock.

Although I have described more or less precise forms and details of construction, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form, proportion of parts, and the substitution of equivalents, as circumstances may suggest or
10 render expedient.

I claim—

1. The combination of a rod having its ends journaled on both sides of the door-opening and extending thereacross, a door-frame slid-
15 ably journaled thereon and brackets secured to the car side beneath the door-frame and

forming fulcrum-points for the swinging of said frame and also retainers therefor when closed.

2. In a car-door, the combination of a rod 20 having its ends journaled in hangers, C, C', on either side of the door-opening, a door-frame pivoted upon the rod, loops, E, E', loosely securing the rod to the door-frame, and brackets, B, B', secured to the car sides 25 and supporting the door-frame, substantially as described.

EDGAR R. M. PIERCE.

Witnesses:

SAMUEL E. HIBBEN,
ELSIE NEMETT.